NCPRP Transportation Asset Management Domestic Scan

AMPLIFYING QUESTIONS

Overview of Transportation Asset Management

1. Please provide a brief overview of how your agency is organized. What are the major funding sources for your transportation program? What are the critical transportation issues/challenges facing your agency?
2. Is the asset management function primarily assigned to one office, or is it integrated throughout the organization? What staff resources are dedicated to this function? Has this organizational responsibility stayed the same over time, or has it changed? If it has changed, why was the change made?
3. What were the major reasons your agency adopted an asset management philosophy for organizational decision making and management? When did your agency first begin to use transportation asset management? How has it evolved since this initial use? What barriers or challenges have you faced in implementing your asset management program in your agency? How were these barriers/challenges overcome?
4. What have been the major "drivers" of transportation asset management in your agency? Are there legislative mandates for conducting asset management?
5. Do you have a stated goal or mission for your asset management program? How important is asset management as stated in this goal or mission in influencing decisions in comparison to other factors, such as politics; emphasis on large-scale, capital projects; regional equity in investment; etc?
6. Have you defined a position in your agency of "asset manager"? If so, what are the duties of this position? Where does the role of asset manager report within your organization with respect to budget allocation and work assignments?
7. Do you have asset management teams in your agency? If so, what is their role, responsibilities? and composition?
8. How have state and local asset management efforts been coordinated?
9. We are interested in comprehensive/integrated/organization-wide transportation asset management programs. By this we mean, an asset management program that considers assets across modes, organizational functions, and asset groups; and that integrates asset management information vertically and horizontally within the agency decision making structure. Would you describe your asset management program as being "comprehensive" and/or "integrated"? What aspects of your program make it so?

Relationship Between Asset Management and Decision Making

1. Please describe the investment decision making processes in your agency. How is the information produced from your asset management process used in your agency decision making, ranging from strategic planning to long range planning to operations decisions? Please provide specific examples of this linkage between asset management information and decision making.

2. Have you used the results of your asset management effort to make the case to elected officials for either additional funds or for shifting funds between priorities (e.g., moving from capacity expansion to preservation)? Have your efforts influenced the overall level of funding provided to your agency?

3. Does your agency have a policy that establishes the relative importance of infrastructure maintenance and preservation versus capacity expansion versus operational improvements? How is a balance in investment made among the different types of projects in your agency's portfolio (e.g., balanced investment among bridge, pavement, operations, preservation, etc. projects)?

4. If investment trade-offs are made among such things as safety, environmental quality, sustainability, congestion relief, capacity expansion, infrastructure preservation, etc., how are these trade-offs made?

5. If your agency is responsible for more than one mode of transportation, how are investment trade-offs made and priorities established among different modal programs?

6. Does your asset management process occur within a much larger transportation system performance measurement or key performance indicator process? If so, what are the key performance/condition measures that are used in the asset management process?

7. If system performance measurement is used in your agency or jurisdiction, how is decision making influenced by performance indicators? If benchmarks or targets are used as part of the performance measurement program, do these benchmarks/targets support decision making or do they "drive" it?

8. Do you use return on investment or benefit/cost analyses to establish project priorities? How do you deal with uncertainty in cost estimates? How do you account for user costs?

9. Do you use life cycle costs analysis in repair/replace/build decisions? Is asset data used to establish life cycle costs information? If so, how does life cycle cost information affect decisions relating to budgets for capital investment and for maintenance?

10. For unique projects where special materials are used in project design (e,g, downtown transit or pedestrian malls, main streets, etc.), do you assess the life cycle costs of such special treatments when making a project decision?

11. If you outsource or privatize maintenance/operations activities in your organization, how is your asset management program used in establishing the budgets, priorities, and/or task allocations in such efforts?

Technical Aspects of Transportation Asset Management

1. What are the major components/tasks of your transportation asset management process? What physical assets are monitored?

2. What are the different data base systems that are part of your asset management program (e.g., pavement, bridge, sign/signal/pavement markings, intelligent transportation system, equipment inventory, etc.)? How are these systems linked or integrated with one another?

3. If you have an integrated or linked set of systems, can managers use them to conduct scenario analyses to investigate the implications on transportation system performance and condition of different levels of investment?

4. For the different assets monitored as part of your asset management program, describe the types of data that are collected and the data collection strategies used. In particular, how does condition inspection occur for the different types of assets in your agency's portfolio?

5. What is the schedule for collecting data on different assets in your inventory? How is this data collection effort staffed (data collection, data entry, data maintenance, process, etc.)? Is data collection a distinct role/task assigned to dedicated forces or is it piggybacked onto other work? What are the costs associated with the data collection effort? Have you conducted a benefit/cost analysis of the data collection effort associated with your asset management effort?

6. What quality assurance/quality control policies and/or methods do you employ to assure the integrity and value of the data collected?

7. Do you track planned and emergency maintenance on individual assets? If so, how is this done within the context of your asset management program?

8. What types of information and location technology systems are used as part of the asset management program (field technology, mapping applications, work management systems, global positioning systems, geographic information systems, etc.)? How are they integrated with each other? What, if any, problems have you had with any of these systems?

9. How do you segment linear systems (roads, trails, sidewalks, etc.) into assets?

10. Can mapped data be used to plan and design projects? For example, is the database detailed enough to be able to target culverts or roadside hardware?

11. Do you use remote electronic devices for either maintaining asset inventories or for tracking asset condition? Do you have, or do you envision, using "smart" materials or sensors for monitoring the condition of infrastructure?

12. Are benchmarks or target values of asset condition and maintenance incorporated into the asset management analysis? Is the level of service or other measures of operating performance used in the asset management analysis? How are these measures established? Has any effort been made to get input from the public or from other groups on what these measures should be?
13. In the context of maintaining infrastructure integrity, how does your agency or jurisdiction establish and enforce restrictions on damage-causing activities such as overweight vehicles? Have the results of your asset management program been used to help define what these activities might be?
14. What technical models/approaches are used as part of your asset management program, in particular to assess the value of assets? What types of asset valuation methods have been used in your asset management program, and have any of these methods been more effective than others?
15. How have you defined "life cycle" or "useful life" time frames for infrastructure management and operations? Do you calculate "remaining service life" as part of this assessment? What process is utilized to calculate RSL?
16. Are you aware of protocols or requirements that mandate life cycle costing in different jurisdictions in your state/province?
17. For those projects with multiple assets (e.g., pavement, lights, signals, signs, etc.), how have life cycle costs of alternative project designs been calculated and used in decision-making for large, long-term expenditures?

Information Understanding and Dissemination

1. To what extent are asset management and the results of your asset management program understood by senior managers, mid-level managers, and other employees in your agency? By key elected officials? By the general public? Did you make any special effort to educate these groups on what asset management means to your jurisdiction?
2. How are the results of your asset management effort conveyed to agency and government decision makers, as well as to the public? What lessons have you learned in this effort on how to communicate such information in the most effective way?
3. How is asset management data/information shared with other units in your organization? Does your agency have compatible data sharing systems in place that allow other organizational units to tap into the data base for their own purposes?
4. If other jurisdictions (e.g., cities) want data on your agency's transportation infrastructure for their own planning purposes, is there a database they have access to? Is this database provided in print and digital form? Is it accessible via the Internet?
5. Does your agency provide training on asset management to your staff and/or to others? If so, what are the topics included in this training?

6. What type of research have you conducted to advance the state-of-practice of asset management?
7. What type of guidance, training, research, or tools would be most beneficial to your agency?

Benefits/Impacts of Transportation Asset Management

1. Do you use any measure or indicator of performance of your asset management function (in this case, we are interested in performance of the asset management program, not of the transportation system)? Are resources allocated within your agency based on achieving performance indicators?
2. Have you evaluated the effectiveness of your asset management program? If so, what measures of effectiveness have you used? What do you think have been the major benefits of asset management as used in your agency, whether they can be measured or not?
3. How effective has the asset management staff function competed for agency resources? Through the use of asset management, how effective has your agency been in competing for resources?
4. Do you benchmark your asset management effort with other agencies and/or jurisdictions? If so, what benchmark measures are used?
5. Based on your experience with asset management, what best practices would you recommend to other agencies?